Instruction Manual for

4-Speed Close Gear Ratio Transmission Kit for XR / CRF50

Item No.：**02－04－2541**

Fits:

HONDA

XR50R : AE03-1000001～

XR70R : DE02-1300001～

CRF50F : AE03-1400000～

CRF70F : DE02-1700001～

- Thank you for purchasing one of our TAKEGAWA's products. Please strictly follow the following instructions in installing and using the Kit.
- Before installing the Kit, please be sure to check the Kit contents. Should you have any questions about the Kit, please contact your local motorcycle dealer.

Read all instructions first before starting the installation

◎ We do not take any responsibility for any accident or damage whatsoever arising from the use of the Kit not in conformity with the instructions in this Instruction Manual.

◎ We shall be held free from any responsibility or compensation whatsoever for any glitch in the parts other than ours if the glitch takes place after the installation and use of this Kit.

◎ Please note that this Kit is designed for exclusive use in the above-mentioned fitting models with the specified frame numbers only and that it cannot be mounted on any other models.

◎ Installation of this Kit requires some work from removal and mounting of the engine to splitting of the crankcase. At some stages of the installation, some special tools are required. Do the installation work correctly referring to the relative genuine service manual for the above-mentioned fitting models. Besides, this Instruction Manual, as well as a service manual, is prepared for those who have acquired basic skill and knowledge. Therefore, those who are not skilled or do not have sufficient knowledge may not be able to install the Kit correctly, leading to parts breakage. Therefore, we recommend those who are technically inexperienced or do not have sufficient tools to ask a technically-reliable specialist shop for the work.

◎ This instruction manual covers the installation work only after the stages of the engine removal from the body and crankcase splitting. Do the removal work correctly before these stages, referring to the relative HONDA's genuine service manual for the above-mentioned fitting models.

◎ The crankcase and kick-starter gear may interfere with each other in some cases because of the difference in sizes of the left-side crank case. In this case, the interfering portion needs to be cut off.

◎ This Kit does not contain gaskets, packings, O-rings, etc., necessary for engine disassembly, which please purchase separately to meet the engine specifications.

◎ Never reuse worn-down or severely-damaged bolts, packings or gaskets. Make sure to replace them with new ones.

◎ Be sure to never use this Kit in combination with other manufacturers' products like engine and clutch. There is a possibility that parts may be damaged. And we shall be held harmless against any breakage or damage of any part caused by the use of this Kit in combination with other manufacturers' products.

◎ You are requested not to contact us about the combination of our products with other manufacturers'.

◎ The drive sprocket spline on the countershaft being different from the genuine one, you are required to procure a drive sprocket for the Monkey additionally.
As the gear ratio of the transmission changes, adjust the number of sprocket teeth as the case may be.

◎ A genuine centrifugal clutch and our TAKEGAWA's heavy-duty clutch can be used as they are. However, with these clutches, mechanically it is rather difficult to shift to neutral. Therefore, we advise you to use this Kit with our TAKEGAWA's Manual Clutch Kit or Special Kit.

⚠ CAUTION The following show the envisioned possibility of injuries to human bodies and property damage as a result of disregarding the following cautions.

- Work only when the engine and muffler are cool. (Otherwise, you will get burned.)
- Do the installation with right tools. (Otherwise, breakage of parts or injuries to you may take place.)
- Always use a torque wrench to screw bolts and nuts tight and securely to the specified torque. (Otherwise, these parts may get damaged or fall off, resulting in accidents.)
- As some products and frames have sharp edges or protruding portions, please work with your hands protected. (Otherwise, you will suffer injuries.)
- Before riding, always check every hardware like screws for slack. If you find slack ones, screw them securely up to the specified torque. (Otherwise, improper tightening may cause parts to come off.)
- The installation of this Kit will change the gear-change pattern to the return system of 1-down-3-up. Change gear only when you have let throttle back to idle position. Changing gears forcibly or at high engine revolutions will cause the gear and other hardware to get damaged or worn out.
- When you start the engine with a kick starter, press down the starter arm hard at the time you feel some resistance on the starter arm, or at the time the starter pinion and rachet fit into each other. Otherwise, the gear will be damaged.
- Please never use this Kit in combination with other manufacturers' ignition-system parts, because it is likely that, if ignition-system parts of other manufacturers' are used, the gear may get damaged owing to impact shock felt at the time of starting the engine with a kick starter.

Aug./29/ 07

⚠ WARNING The following show the envisioned possibility of human death or serious injuries to human bodies as a result of disregarding the following warnings.

- When you notice something unusual with your motorcycle while riding, immediately stop riding and park your motorcycle in a safe place. (Otherwise, the unusuality could lead to accidents.)
- Before doing work, make sure your motorcycle is secure on level ground for safety's sake. (Otherwise, your motorcycle could overturn and injure you while you are working.)
- Carry out inspection and maintenance of your motorcycle correctly according to the instructions and guidelines in the instruction and service manuals. (Improper inspection or maintenance could lead to accidents.)
- If you find damaged parts when inspecting or performing maintenance of your motorcycle, do not use these parts any longer, and replace them with new ones. (The continued use of these damaged parts as they are could lead to accidents.)
- Keep plastic bags for packing the products out of children's reach, or discard them. (If children get them on, there will be a danger of their suffocating.)

◎ Please be informed that, mainly because of improvement in performance, design changes, and cost increase, the product specifications and prices are subject to change without prior notice.

◎ This manual should be retained for future reference.

～Features～

○ This is a 4-speed transmission kit designed with a gear ratio for sports driving as compared with a genuine 3-speed transmission.

○ This Kit can be used with our TAKEGAWA's Heavy-Duty Centrifugal Clutch, Special Clutch or Heavy-Duty Manual Clutch Kit.

Gear Ratio List

	Stock transmission on CRF50F	TAKEGAWA's close ratio transmission
1st speed	3.272 (36 / 11)	2.615 (34 / 13)
2nd speed	1.666 (25 / 15)	1.823 (31 / 17)
3rd speed	1.190 (25 / 21)	1.350 (27 / 20)
4th speed	———————	1.090 (24 / 20)

Kit includes:

No.	Item	Qty
1	Mainshaft assembly	1
2	Countershaft assembly	1
3	Kick starter pinion (24T)	1
4	Gearshift drum assembly	1
5	Shift drum pins	3
6	Shift drum side plate	1
7	Shift drum cam	1
8	Shift drum stopper spring	1
9	Rollers	2

※ For repair parts Nos, please refer to the list on the last page of this Instruction Manual.

～Installation Instructions～

• Support the motorcycle upright on a maintenance stand on level and safe ground for safety's sake.
• As what you do is only to replace the genuine parts with those of the Kit, basically follow the work and procedures in the genuine service manual. This Instruction Manual only outlines the work different from the work mentioned in the genuine service manual. Please prepare a genuine service manual needed for the installation.

1. Referring to the genuine service manual, split the crankcase.

2. Change the kick starter pinion of the kick starter spindle with the one (No.3) included in the Kit.

3. After changing the kick starter pinion, temporarily install it to the left side crankcase and rotate it to check whether or not the kick starter pinion and left side crankcase interfere with each other.

If the two interfere with each other, scrape the crankcase with a hand grinder until there is no more interference at the circled portion.
※ Cover the bearing with a tape not to get any dirt, dust or chips into it.
※ Work with gloves on so you do not get your hands cut with the edge of the case or the like.
※ After scraping the case, wash it not to leave the cuttings in the case.

4. Place the left side crankcase on the maintenance stand or the like, and fabricate the mainshaft assembly (No.1), countershaft assembly (No.2) and gearshift drum assembly (No.4). And then, install the fabricated unit into the case.
Place a 14mm genuine thrust washer between the mainshaft and the left side crankcase, and a 13.5mm genuine thrust washer between C4 gear and right side crankcase.
And apply engine oil to the teeth of every gear and every sliding surface.
Note : To the countershaft, install only a 13.5mm genuine thrust washer. And a 30x1.7 washer B thrust is not to be used with this kit.

Genuine thrust washer, 13.5 mm

Genuine thrust washer, 14.0 mm

5. Attach the kick starter spindle to the crankcase, meshing its friction spring with a groove in the crankcase.

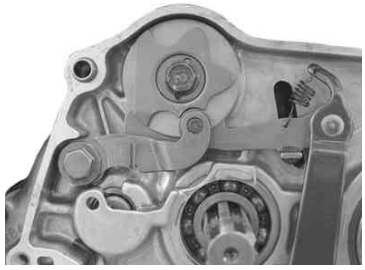
6. Clean the mating surfaces on the crankcases, and attach a knock pin and a new gasket to the crankcase.
Note : A gasket is not included in this Kit. Please prepare one separately which meets the engine specification.

7. Referring to the genuine service manual, install the right side crankcase, being careful not to let the gasket get out of place.

8. Attach a genuine gearshift arm COMP. and spindle spring to the right side crankcase, and to the gearshift drum, attach three gearshift drum pins of No.5 and two rollers of No.9.

9. First attach a shift drum side plate of No.6, and then a shift drum cam of No.7.
Reuse a genuine cam plate bolt, and tighten it to the specified torque.
Torque: 17 N • m (1.7 kgf • m)

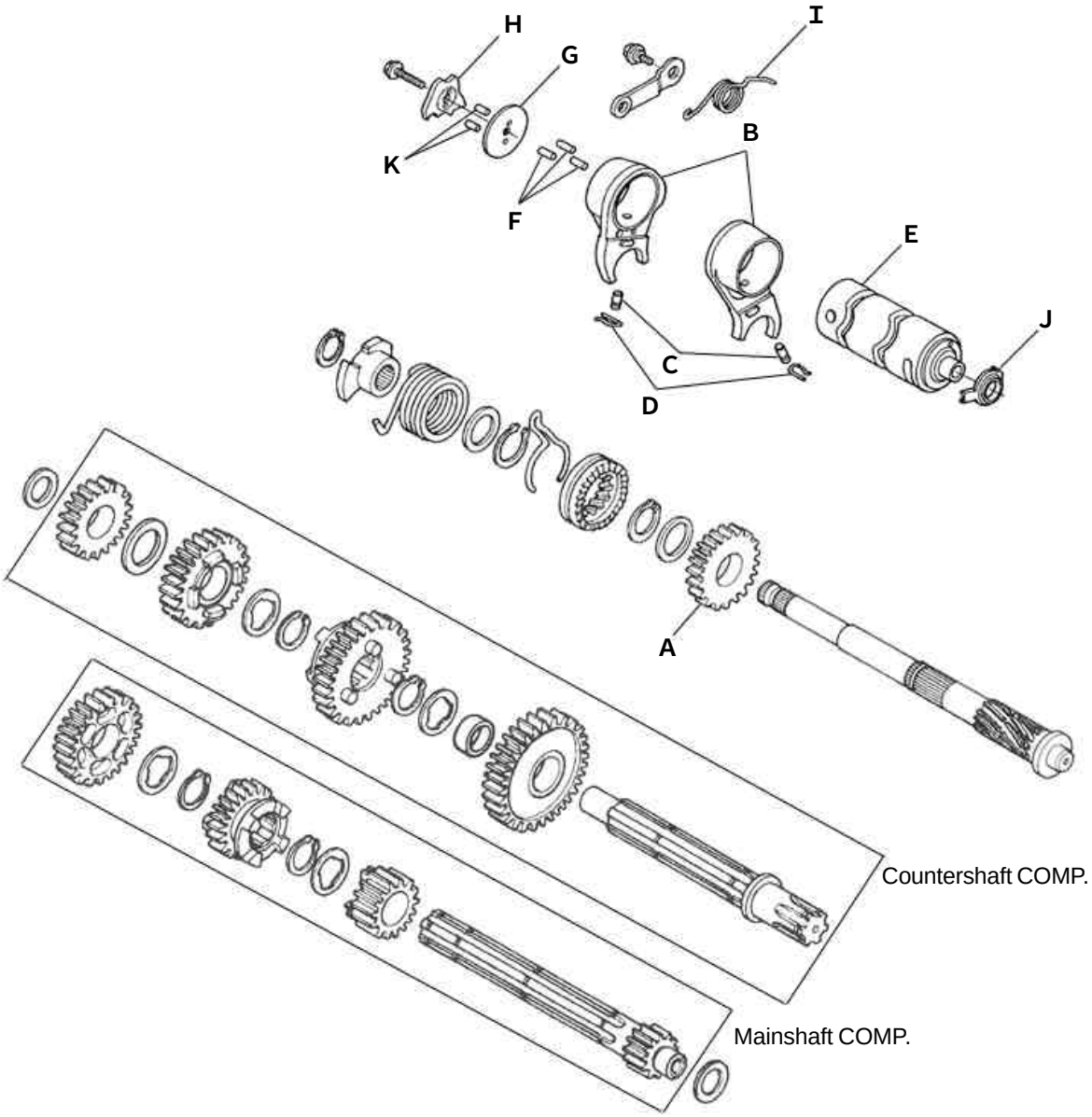
10. Change a return spring in the shift drum stopper arm with a supplied shift drum stopper spring of No.8, and install the stopper arm.
And tighten the bolt to the specified torque.
Torque: 13 N • m (1.3 kgf • m)



11. Referring to the genuine service manual, reinstall back the engine, and mount it on the motorcycle.
In case this Kit is to be installed onto a motorcycle with a centrifugal clutch as it is, please also refer to the step below: ●In the case of installing this Kit onto a motorcycle with a centrifugal clutch as it is:

12. Please separately prepare a drive sprocket for the MONKEY for installation.
As the gear ratio of the transmission changes, adjust the number of sprocket teeth as the case may be.

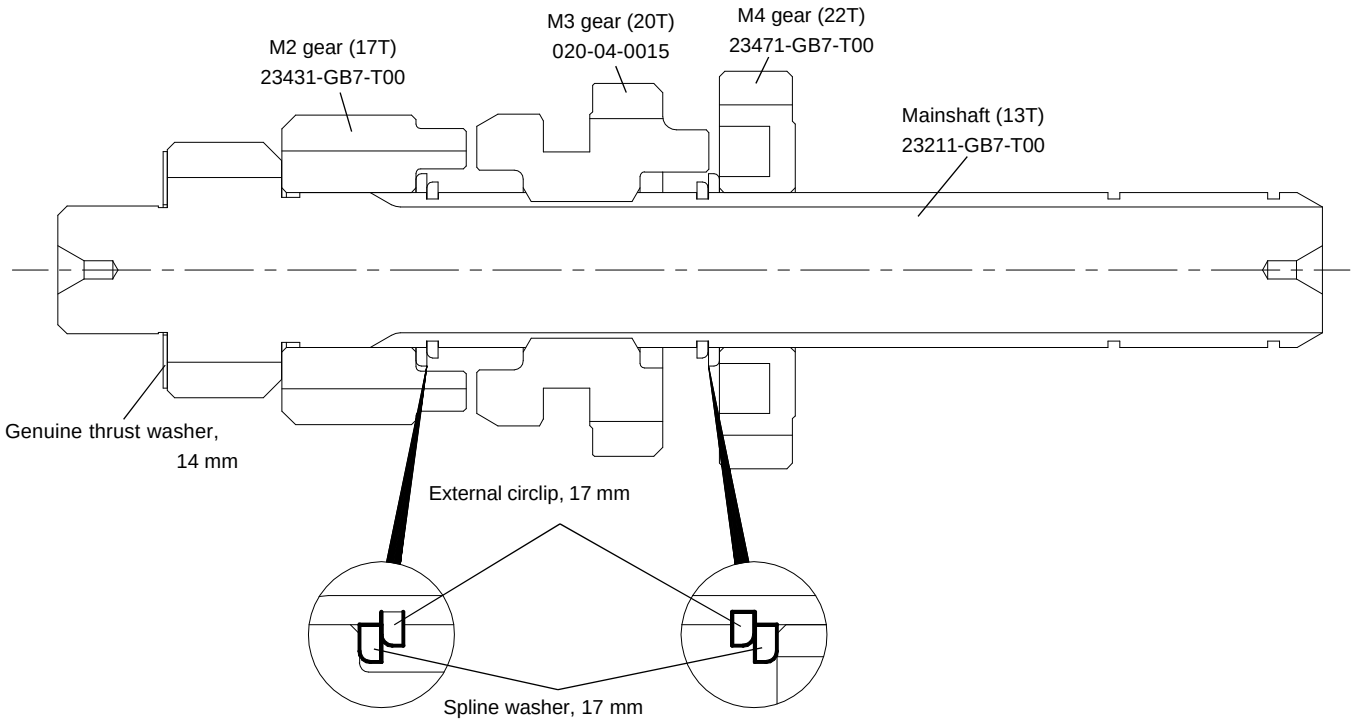
●In the case of installing this Kit onto a motorcycle with a centrifugal clutch as it is:
Although it is possible to install this Kit onto a motorcycle with a centrifugal clutch, in some cases it will be mechanically hard to shift to neutral.
This is because when shifting to neutral, the shift pedal slides only slightly, and thus the clutch cannot be disengaged.
In order to make the gearshift to neutral easier, even if only slightly, adjust the clutch after the installation of this Kit so you will get as little free play as possible .
To get the fundamental solution of this problem, it is advisable that you use this Kit with our TAKEGAWA's Manual Clutch Kit or Special Clutch Kit.



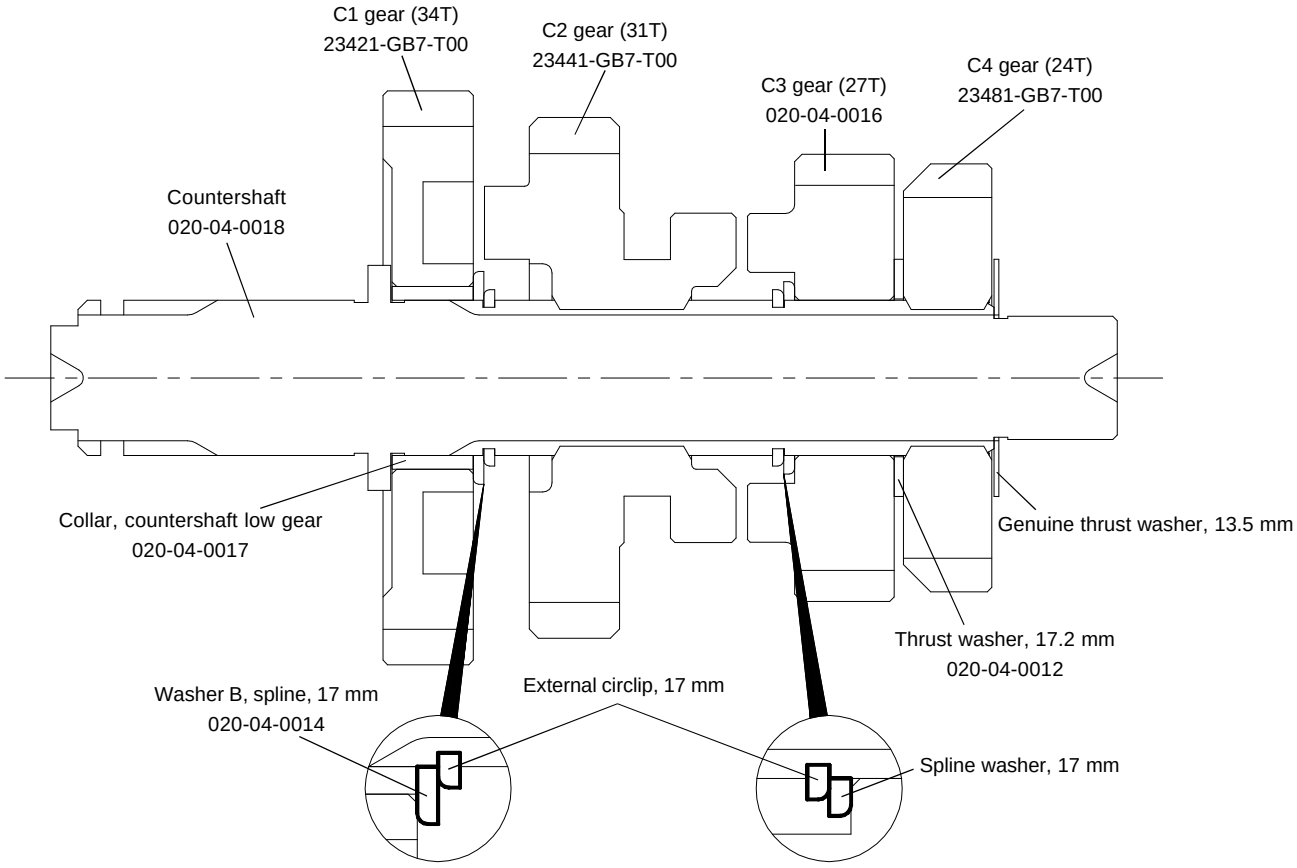
No.	Part Name	Qty	Repair Part Item No.	in packs of
A	Kick starter pinion	1	28211-GEF-T00	1
B	Fork, gear shift	2	24018-0015	1
C	Pin, gearshift fork guide	2	241-43	3
D	Shift fork guide pin clip	2	241-20	1
E	Drum, gearshift	1	24018-0018	1
F	Pin, gearshift drum	3	24018-0020	5
G	Plate, gearshift drum side	1	24018-0021	1
H	Plate, gearshift drum stopper	1	24018-0019	1
I	Spring, shiftdrum stopper	1	24018-0025	1
J	Neutral switch rotor	1	241-21	1
K	Roller, 3 x 8.5	2	24015-0023	1

※Please reuse genuine parts for those unnumbered parts.

●Mainshaft COMP.



●Countershaft COMP.



Part name	Qty	Repair item No.	In packs of
Spline washer, 17 mm	3	241-38	5
External circlip, 17 mm	4	241-39	5

SPECIAL PARTS TAKEGAWA Co.,Ltd.
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